



Object Properties

Summary

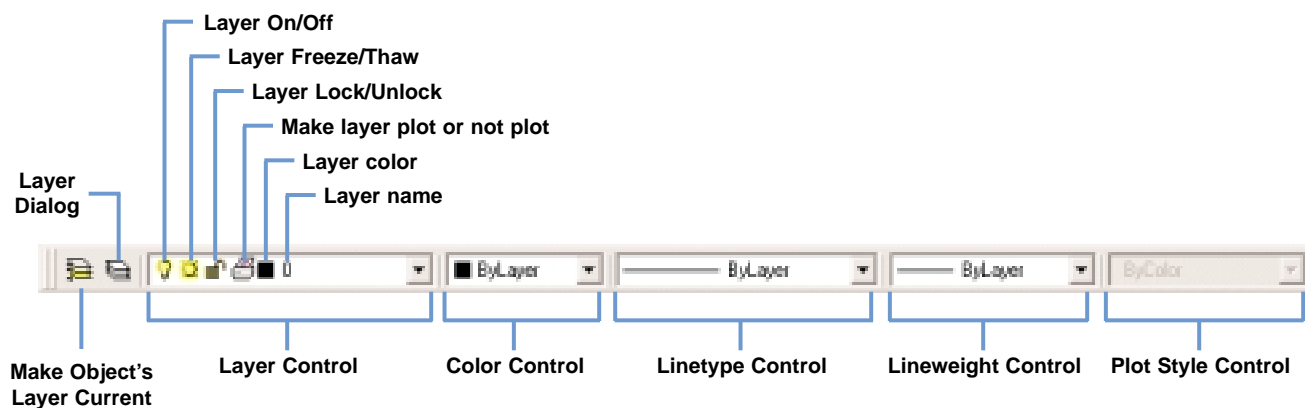
In this chapter, you learn about:

Object Properties Toolbar

Object Properties Manager

Layer Properties Manager

The Object Properties toolbar in AutoCAD 2000 has two new items and is missing two items when compared to release 14. Added are Lineweight Control and Plot Style Control - gone are the Linetype and Properties buttons (Linetype Control pull-down is still there).



Make Object's Layer Current

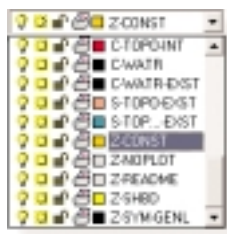
Pick this button, then select an object - the layer of that object is now the current layer. This has not changed from release 14.

Layer Dialog

Presents the “Layer Properties Manager” dialog, which has changed from release 14. We’ll talk more about Layer Properties Manager later in this chapter.

Layer Control

Layer Control has a new feature, character matching; click on Layer Control, then press the first character of the layer you're working with. The example here shows how, when the Z key is pressed, Layer Control's character matching takes you instantly to the first layer starting with Z.



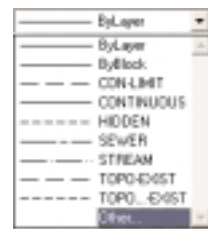
Also, notice the plotter icon in Layer Control, which makes layers plottable or non-plottable, regardless of color. Layers can only be made non-plottable if you use AutoCAD's Print/Plot command. If you're using PrfGenerator, setting a layer to not plot has no effect.

Color Control

No changes here - it's the same as release 14.

Linetype Control

Though the Linetype button has been removed from the Object Properties toolbar, you can still access the Linetype dialog by clicking **Other** from the Linetype Control pull-down menu.



Lineweight Control

Lineweights add width to your objects, both on screen and on paper. Using lineweights, you can create heavy and thin lines to show cuts in sections, depth in elevations, dimension lines and tick marks, and varying object thickness' in details. By assigning varying lineweights to different layers, you can easily differentiate between new, existing, and demolition construction. Just as heavy and thin lead weights are used in manual drafting, lineweights can be used to graphically represent different objects and types of information. You should not use lineweights, however, to represent the exact width of an object. For example, if you want to draw an object with a real-world width of 0.5 inches, you should not use a lineweight; instead, use a polyline with a width of 0.5 inches to represent the object accurately.

If you use AutoCAD's Print/Plot command, and you are using named Plot Styles, objects with a lineweight plot with the exact width of the assigned lineweight value. If you plot using PrtGenerator, or use color-dependent plot styles (like we do here at DSC), lineweights have no effect on the plot - lineweights are plotted according to color, as they have in the past.

Lineweight values consist of standard settings including BYLAYER, BYBLOCK, and DEFAULT. Values are displayed in either inches or millimeters, with millimeters being the default. DEFAULT is the default value for layers.

A lineweight value of 0 is displayed as one pixel in model space and plots at the thinnest lineweight available on the plotting device. Any object with a lineweight of 0.01 inches (0.025 mm) or less is displayed with a width of one pixel in model space. Lineweight values that you enter on the command line are rounded to the nearest predefined value.

You can export drawings to other applications or cut objects to the Clipboard and retain lineweight information. You can also set the lineweight units and the default value in the Lineweight Settings dialog box. You can access the Lineweight Settings dialog box by using the LWEIGHT command, right-clicking the LWT button on the status bar and choosing Settings, or choosing Lineweight Settings on the Display tab in the Options dialog box.

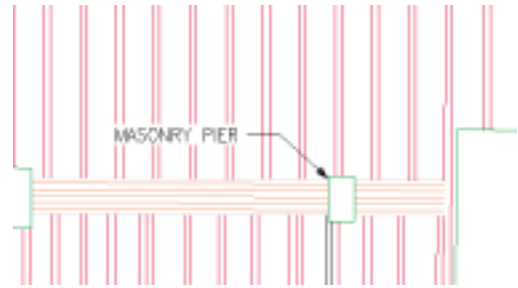
NOTE: If you save an AutoCAD drawing in the format for a previous release, the drawing preview displays lineweights even though the pre-AutoCAD 2000 drawing does not display lineweights.

Exercise 1 - Using Lineweights

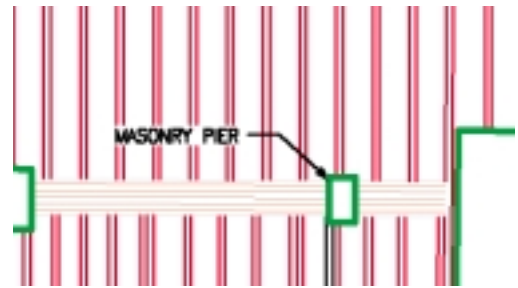
Note: If you use lineweights in drawings here at DSC, remember that they will be for screen display purposes only. We have 35,000 AutoCAD drawings on the network, and for this reason we'll be using color-dependant plot styles. This means that drawings that use lineweights will plot based on an objects color, not its lineweight.

1. Open Chap04Ex01.dwg.
2. If the LWT button on the status bar is not depressed, click on it. This turns lineweight display ON. If your drawing has objects with varying lineweights, as this drawing does, you'll notice the different lineweights between objects.

LWT



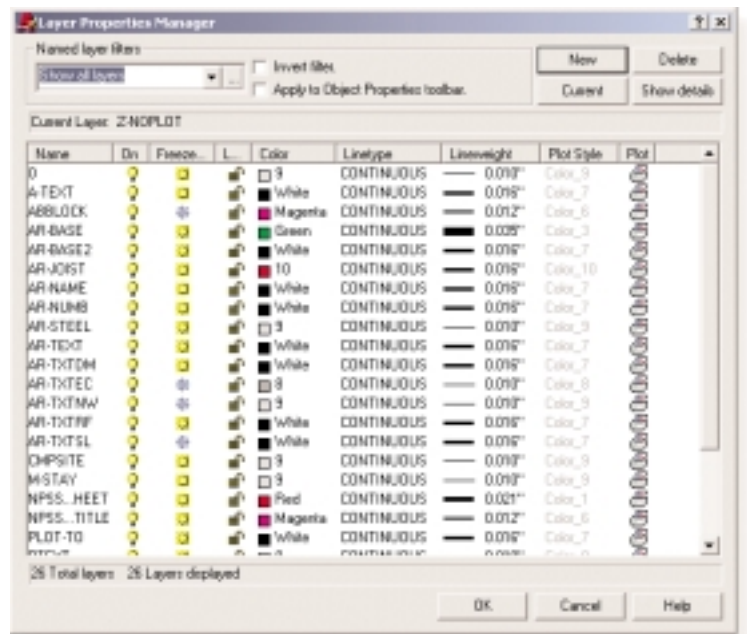
Chap04Ex01.dwg with Lineweights Off



Chap04Ex01.dwg with Lineweights On

To understand how an object is assigned a lineweight, let's look at the Layer command...

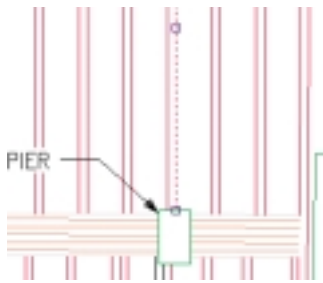
3. Click on Layer from the Object Properties toolbar, or type LA<Enter>.



4. Notice that each layer has a Lineweight; red layers are 0.021", white layers are 0.016" etc. You can change a layers lineweight by clicking in the lineweight column - a Lineweight dialog will appear.

5. Cancel the Layer Properties Manager.

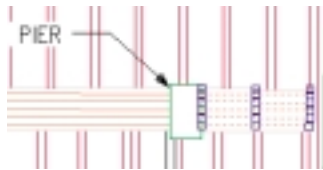
6. Select a line in the drawing by left-clicking on it. On the Object properties toolbar, you'll see the lines layer, color, linetype and lineweight. The line shown selected here is layer: AR-JOIST, color: bylayer, linetype: bylayer, lineweight: bylayer.



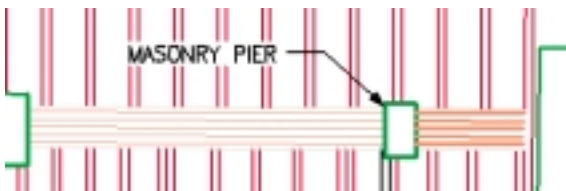
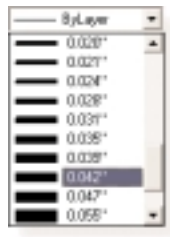
7. Use the Layer command to look up the lineweight for layer AR-JOIST - it has a lineweight of 0.016". The selected line has a lineweight assigned bylayer, and its layer has a lineweight of 0.016" - therefore this line has a lineweight of 0.016".

Lineweights behave just like colors; an object can be color bylayer or be a specific color, and an object can have a lineweight bylayer, or have a specific lineweight.

8. Cancel the Layer Properties Manager. Select several of the vertical lines shown here. When selected, you'll see grips on the lines.



9. Click on Lineweight Control from the menu bar, then select 0.042". (Refer to page 1 of this chapter if you're not sure where the Lineweight Control is.) Remember, these lines were bylayer, now they're 0.042".

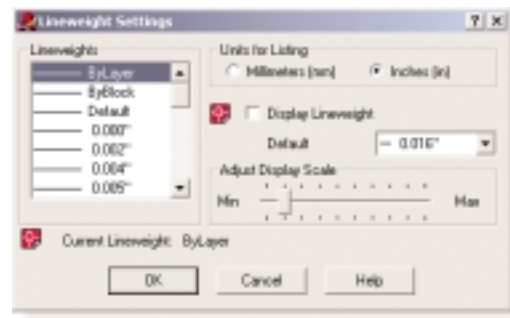


Notice how the lines you changed to 0.042 appear different than the other lines which are on the same layer, but are lineweight: bylayer.

10. Turn Lineweight display OFF by clicking on LWT on the Status Bar. All objects appear 1 pixel wide, regardless of lineweight.

11. Right-click over LWT on the Status Bar, then select

Settings. The Lineweight Settings dialog will appear.



You can change between millimeter and inch units for lineweights, as well as select a default lineweight.

12. Move the Adjust Display Scale slider to the other end of the scale. Make sure the Display Lineweight box is checked, then click OK. You'll see the difference in your drawing display. Use this setting to fine-tune displayed lineweights.

This completes Exercise 1. Close Chap04Ex01.dwg, discard changes.

Plot Style Control

If you're using AutoCAD at DSC, or you're working to DSC standards, your Plot Style Control should be disabled (grayed out). We use color-dependent plot styles - this control is for named plot styles, and is not discussed in this training guide.


To use color dependent plot styles in both new drawings and drawings created in earlier versions of AutoCAD, click **Tools → Options** from the menu bar, select "Use color dependent plot styles" in the Plotting tab.

To convert a drawing that uses color dependent plot styles to named plot styles, use the CONVERTPSTYLES command. You cannot directly convert a drawing that uses named plot styles to color dependent plot styles, however, you could insert the named plot style drawing into a color dependent plot styles drawing - therefore making the conversion.

Object Properties Manager

AutoCAD 2000 introduces the Properties window, also known as the Object Properties Manager. The Properties window combines the functionality found in such com-

mands as DDMODIFY and DDCHPROP and adds other object-specific editing commands.

You display the Properties window by pressing CTRL+1, clicking **Tools** → **Properties** from the menu bar, or clicking the Properties button  on the Standard toolbar.

The Properties window is resizable, dockable and modeless (always available until dismissed).

Exercise 2 - Using Object Properties Manager

1. Open Chap04Ex02.dwg.
2. If the Properties window is not visible, click the Properties button.



You should see **No selection** near the top of the Properties window - if not, press Esc on the keyboard twice.

Since you have no objects selected, the Properties window displays drawing settings.

General settings include color, layer, linetype/scale, lineweight and thickness. These settings effect objects not yet created. For instance, if you change the layer setting, you are setting your **current** layer.

Plot style settings include only one modifiable value - Plot Style table - which we'll learn more about in the Plotting chapter of this guide.

View settings are read only (you cannot change them).

Miscellaneous settings include UCS and UCS Icon settings.

3. In the Properties window, pull down the Layer list, then select Text. Notice that your current layer is now Text. Since you have **no objects selected**, chang-

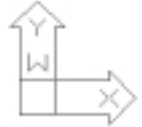


ing the layer here sets that layer current.

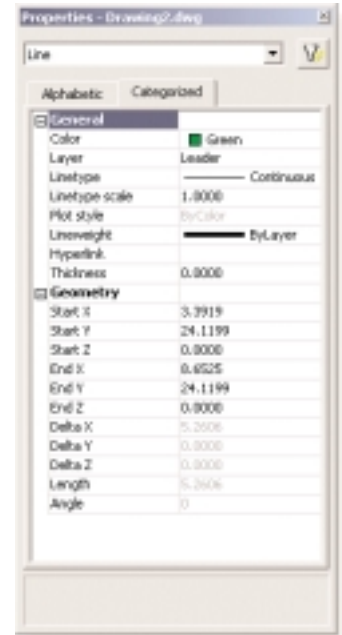
4. Again in the Properties window, pull down the UCS icon On item, then select No.



Notice the UCS icon (shown here), is now off.

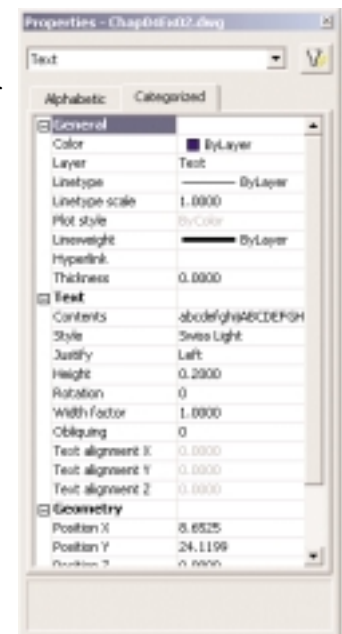


5. Select one line by left-clicking over it - grips will appear on the line when it's selected.
6. Notice the Properties window displays information about the selected line.



Object Properties Manager with one line object selected

7. Deselect the line by pressing Esc twice on the keyboard.
8. Select one text object by left-clicking over it - one or more grips will appear on the selected text.
9. Notice the properties of the text object are different than those of the line object - for instance, text has contents, style, justification, line properties do not.



Object Properties Manager with one text object selected

10. In the Contents box, type new text - any entry you wish, then change the Style to Standard.



Notice in your drawing how the selected text has changed in content and style.

11. Zoom extents and then out some so that you can see all objects in the drawing.

12. Select all objects in the drawing using a crossing window.

Notice the content in Properties - it's much shorter now. Listed are properties which are common to all objects in the drawing - text objects and line objects.



13. In the pull-down at the top of Properties, select Text. Properties tells us there are 94 text objects selected.



Notice the Height box in Properties is blank. A blank indicates there are varying values for that property - in other words the selected text is not all of the same height.

14. In the Height box type 2.5, then press Enter. You've just changed all text in this drawing to a height of 2.5 units.

In a similar fashion, you could use Properties to change the Z elevation of all lines to a value of 0.0.


This completes Exercise 2. Close Chap04Ex02.dwg, discard changes.

Layer Properties Manager

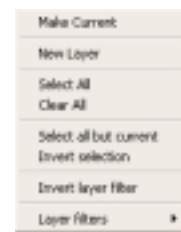
AutoCAD's new resizable layer Properties Manager provides more than twice the display area for listing layer names, as found in earlier releases. Enhancements to the Layer window include:

- Support for 255 character layer names
- Easy to read layer names are "case aware" - they retain uppercase/lowercase character as entered.
- Improvements to layer filters
- Double-click to set a layer current
- Improved right-click shortcut menus
- Layer attributes support lineweight, plot style and plot/no plot
- Enhanced Text Tip support for all layer columns

Exercise 3 - Using Layer Properties Manager

1. Open Chap04Ex03.dwg.
2. Open Layer Properties Manager by clicking Format → Layer from the menu bar, or type LA<Enter>, or click on the Layers button  on the Object Properties toolbar.

3. Right-click over any layer name to see the shortcut menu shown here.



Make Current: Makes the selected layer current. You can also double-click on a layer name to make it the current layer.

New Layer: Creates a new layer using the same properties (color, linetype etc.) as the selected layer.

Select All

Clear All

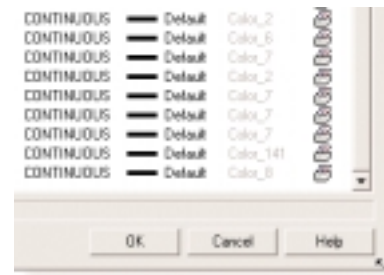
Select all but current

Invert selection: Select layers are unselected, unselected layers are selected.

Invert layer filter: Inverts the displayed layers.

Layer filters: Limit which layer names are displayed.

4. Resize the Layer window - left-click over the lower-left corner of the Layer window. You'll see a diagonal arrow appear. While holding down the mouse button, drag the



Objects on no-plot layers will not plot, regardless of their color.

19. Click OK to exit Layer Properties Manager.

This completes exercise 3. Close Chap04Ex03.dwg, discard changes.

This completes Chapter 4.